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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/644,222	08/19/2003	Yukimitsu Sekimori	2999-031604	6466
28289	7590	12/23/2004	EXAMINER	
WEBB ZIESENHEIM LOGSDON ORKIN & HANSON, P.C. 700 KOPPERS BUILDING 436 SEVENTH AVENUE PITTSBURGH, PA 15219			ALLEN, ANDRE J	
			ART UNIT	PAPER NUMBER
			2855	

DATE MAILED: 12/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/644,222

Applicant(s)

SEKIMORI ET AL.

Examiner

Andre J. Allen

Art Unit

2855

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 19 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 8-19-03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-4 and 5-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moriya in view DeConde et al.

Regarding claims 1 and 2 Moriya teaches a device comprising a first substrate 22 having a detection face 26; a movable electrode (col. 20 line 47) provided with a space from the detection face of said first substrate and capable of being displaced to and from said first substrate (col. 20 lines 50-55); a fixed electrode 86 provided on the detection face of said first substrate; and a first signal fetching section electrically connected to said movable electrode (col. 19 lines 45-65), and said movable electrode is formed by a single-crystal silicon (col. 12 lines 55-59) with by mixing therein dopant lowering the resistance value (col.

12 lines 55-59). Moriya does not teach wherein said first signal fetching section is formed with metal having high corrosion resistance. DeConde et al teaches an entire sensor formed with metal having high corrosion resistance [100]. Since DeConde teaches the sensor to be made of high corrosion resistance, this would clearly suggest any signal fetching or detecting section. Therefore, it would have been obvious to a person having ordinary skill in the art of fabricating sensor structures at the time the invention was made to modify Moriya with a signal fetching section made of high corrosion resistance as taught by DeConde et al for the purpose of relative ease of processing allowing for the fabrication process to be applied to large area substrates, yielding more sensors per processed wafer and decreased manufacturing costs (DeConde et al [100]).

Regarding claims 1 and 2 Moriya teaches a movable electrode formed by single crystal silicon but does not teach dry/wet etching for the silicon nor a specific resistance of $1.0 \Omega \text{ cm}$ or below. It would have been obvious at the time the invention was made to a person having ordinary skill in the art of fabricating sensors at the time the invention was made to interpret the low resistance taught by Moriya (col. 12 lines 55-59) to be at least $1.0 \Omega \text{ cm}$ or below since it is clearly suggesting lower resistance values and lacking any criticality, whatever etching means readily available to the manufacture to apply the single crystal single silicon for the purpose of manufacturing the most effective and precise sensor at low cost. (MPEP 2144.03-.04)

Regarding claims 3 and 4 Moriya does not teach a p-conduction type electrode, lacking any criticality it would have been obvious to a person having

ordinary skill in the art at the time the invention was made to use the most feasible conductive electrode readily available to the manufacturer for the purpose of effectively increasing the sensitivity of the capacitance detection (col. 4 lines 5-10 Moriya)

Regarding claims 5-8 Moriya does not teach the signal fetching section to be made of titanium, lacking any criticality it would have been obvious to a person having ordinary skill in the art at the time the invention was made to use titanium or any of the most feasible conductive type electrode readily available to the manufacturer for the purpose of effectively increasing the sensitivity of the capacitance detection (col. 4 lines 5-10 Moriya) since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use. In re Leshin 125 USPQ 416.

Allowable Subject Matter

2. Claims 9-20 are objected to as being dependent upon a rejected base claim, but claims 9 and 10 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: The cited prior art does not disclose nor suggest a second substrate provided *t.11 a space to a surface of said movable electrode in the contrary side from the surface opposing to the detection face of said first substrate, wherein an extended section extending outward more as compared to a side face of said first substrate is provided on said second substrate, and said

first signal fetching section is provided spanning from a surface of said extended section in the side closer to said first substrate up to a surface in the contrary side from the detection face of said first substrate.


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andre J. Allen whose telephone number is 571-272-2174. The examiner can normally be reached on mon-fri 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz can be reached on 571-272-2180. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Andre Allen
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Art Unit 2855


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